

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims

1 (Original): A banding packing machine comprising:

a common touch roller provided to freely come in pressure contact with and separate from a normal rotating roller and a reverse rotating roller;

band feeding means constituted by causing the common touch roller to come in pressure contact with the normal rotating roller and serving to feed a tip of a band in a packing machine body toward a band guide arch side;

detecting means for detecting that the tip portion of the band arrives at a predetermined position of the band guide arch;

band pulling back means constituted by causing the common touch roller to come in pressure contact with the reverse rotating roller and serving to pull back the band fed toward the band guide arch side based on a signal generated from the detecting means;

band tightening means for tightening the band thus pulled back; and

a back pool box or a pool box which is partitioned in the packing machine body for temporarily storing the unused band pulled back by the band pulling back means and the band tightening means,

in which when the unused band stored in the back pool box or the pool box is to be used for next banding, said unused band is fed toward the band guide arch side by driving force of the band feeding means including the normal rotating roller and the common touch roller, and an insufficient amount of the band is further reeled out directly from a band reel toward the band guide arch side and is thus fed toward the guide arch side,

wherein a rotating speed of driving means for rotating the band reel is detected by the detecting means when the insufficient amount of the band is directly reeled out from the band reel toward the band guide arch side, and it is decided that the band is left in the band reel if the rotating speed of the driving means is changed, and

it is decided that the band is not left in the band reel if the rotating speed of the driving means is not changed but the rotation is carried out at an almost constant speed.

2 (Original): The banding packing machine according to claim 1, wherein a detected portion of the driving means in which the change in the rotating speed is detected is the common touch roller constituting the band feeding means.

3 (Original): The banding packing machine according to claim 1, wherein a detected portion of the driving means in which the change in the rotating speed is detected is a pool feed touch roller, which comes in pressure contact with a rotating shaft of a pool feed motor provided for reeling out the band from the band reel to the pool box.

4 (Currently Amended): The banding packing machine according to ~~any of claims 1 to 3~~ claim 1, wherein the means for detecting a rotating speed is a proximity switch.

5 (Currently Amended): The banding packing machine according to ~~any of claims 1 to 4~~ claim 1, further comprising a disk attached integrally with a rotating shaft of the common touch roller or the pool feed touch roller and provided with a notch,

passage of the notch with a rotation of the rotating shaft being detected by the proximity switch, whereby a rotating speed of the common touch roller or the pool feed touch roller is detected.

6 (Currently Amended): The banding packing machine according to ~~claim 4 or 5~~, wherein the detection of the rotating speed of the common touch roller or the pool feed touch roller by the proximity switch is carried out at a pulse voltage in the proximity switch,

it is decided that the band is left in the band reel if a pulse interval of the pulse voltage is changed, and

it is decided that the band is not left in the band reel if the pulse voltage has an almost constant pulse interval.

7 (Original): A banding packing machine comprising:
a common touch roller provided to freely come in pressure contact with and separate from a normal rotating roller and a reverse rotating roller;

band feeding means constituted by causing the common touch roller to come in pressure contact with the normal rotating roller and serving to feed a tip of a band in a packing machine body toward a band guide arch side;

detecting means for detecting that the tip portion of the band arrives at a predetermined position of the band guide arch;

band pulling back means constituted by causing the common touch roller to come in pressure contact with the reverse rotating roller and serving to pull back the band fed toward the band guide arch side based on a signal generated from the detecting means;

band tightening means for tightening the band thus pulled back; and

a back pool box or a pool box which is partitioned in the packing machine body for temporarily storing the unused band pulled back by the band pulling back means and the band tightening means,

in which when the unused band stored in the back pool box or the pool box is to be used for next banding, said unused band is fed toward the band guide arch side by driving force of the band feeding means including the normal rotating roller and the common touch roller, and an insufficient amount of the band is further reeled out directly from a band reel toward the band guide arch side and is thus fed toward the guide arch side,

wherein a rotating speed of driving means for rotating the band reel is detected by the detecting means when the insufficient amount of the band is directly reeled out from the band reel toward the band guide arch side, and it is decided that the band is left in the band reel if the rotating speed of the driving means is changed,

it is decided that the band is left in the band reel if the rotating speed of the driving means is not changed but the rotation is carried out at an almost constant speed and arrival of the tip portion of the band at a predetermined position on the band guide arch side is detected by the detecting means, and

it is decided that the band is not left in the band reel if the rotating speed of the driving means is not changed but the rotation is carried out at an almost constant speed and the arrival of the tip portion of the band at the predetermined position on the band guide arch side is not detected by the detecting means.

8 (Original): The banding packing machine according to claim 7, wherein a detected portion of the driving means in which the change in the rotating speed is detected is the common touch roller constituting the band feeding means.

9 (Original): The banding packing machine according to claim 7, wherein a detected portion of the driving means in which the change in the rotating speed is detected is a pool feed touch roller, which comes in pressure contact with a rotating shaft of a pool feed motor provided for reeling out the band from the band reel to the pool box.

10 (Currently Amended): The banding packing machine according to ~~any of claims 7 to 9~~ claim 7, wherein the means for detecting a rotating speed is a proximity switch.

11 (Currently Amended): The banding packing machine according to ~~any of claims 7 to 10~~ claim 7, further comprising a disk attached integrally with a rotating shaft of the common touch roller or the pool feed touch roller and provided with a notch,

passage of the notch with a rotation of the rotating shaft being detected by a proximity switch, whereby a rotating speed of the common touch roller or the pool feed touch roller is detected.

12 (Currently Amended): The banding packing machine according to claim ~~10 or 11~~, wherein the detection of the rotating speed of the common touch roller or the pool feed touch roller by the proximity switch is carried out at a pulse voltage in the proximity switch,

it is decided that the band is left in the band reel if a pulse interval of the pulse voltage is changed, and

it is decided that the band is not left in the band reel if the pulse voltage has an almost constant pulse interval.

13 (New): The banding packing machine according to claim 2, wherein the means for detecting a rotating speed is a proximity switch.

14 (New): The banding packing machine according to claim 3, wherein the means for detecting a rotating speed is a proximity switch.

15 (New): The banding packing machine according to claim 2, further comprising a disk attached integrally with a rotating shaft of the common touch roller or the pool feed touch roller and provided with a notch,

passage of the notch with a rotation of the rotating shaft being detected by the proximity switch, whereby a rotating speed of the common touch roller or the pool feed touch roller is detected.

16 (New): The banding packing machine according to claim 3, further comprising a disk attached integrally with a rotating shaft of the common touch roller or the pool feed touch roller and provided with a notch,

passage of the notch with a rotation of the rotating shaft being detected by the proximity switch, whereby a rotating speed of the common touch roller or the pool feed touch roller is detected.

17 (New): The banding packing machine according to claim 4, further comprising a disk attached integrally with a rotating shaft of the common touch roller or the pool feed touch roller and provided with a notch,

passage of the notch with a rotation of the rotating shaft being detected by the proximity switch, whereby a rotating speed of the common touch roller or the pool feed touch roller is detected.

18 (New): The banding packing machine according to claim 5, wherein the detection of the rotating speed of the common touch roller or the pool feed touch roller by the proximity switch is carried out at a pulse voltage in the proximity switch,

it is decided that the band is left in the band reel if a pulse interval of the pulse voltage is changed, and

it is decided that the band is not left in the band reel if the pulse voltage has an almost constant pulse interval.

19 (New): The banding packing machine according to claim 8, wherein the means for detecting a rotating speed is a proximity switch.

20 (New): The banding packing machine according to claim 9, wherein the means for detecting a rotating speed is a proximity switch.

21 (New): The banding packing machine according to claim 8, further comprising a disk attached integrally with a rotating shaft of the common touch roller or the pool feed touch roller and provided with a notch,

passage of the notch with a rotation of the rotating shaft being detected by a proximity switch, whereby a rotating speed of the common touch roller or the pool feed touch roller is detected.

22 (New): The banding packing machine according to claim 9, further comprising a disk attached integrally with a rotating shaft of the common touch roller or the pool feed touch roller and provided with a notch,

passage of the notch with a rotation of the rotating shaft being detected by a proximity switch, whereby a rotating speed of the common touch roller or the pool feed touch roller is detected.

23 (New): The banding packing machine according to claim 10, further comprising a disk attached integrally with a rotating shaft of the common touch roller or the pool feed touch roller and provided with a notch,

passage of the notch with a rotation of the rotating shaft being detected by a proximity switch, whereby a rotating speed of the common touch roller or the pool feed touch roller is detected.

24 (Currently Amended): The banding packing machine according to claim 11, wherein the detection of the rotating speed of the common touch roller or the pool feed touch roller by the proximity switch is carried out at a pulse voltage in the proximity switch,

it is decided that the band is left in the band reel if a pulse interval of the pulse voltage is changed, and

it is decided that the band is not left in the band reel if the pulse voltage has an almost constant pulse interval.